

REMARKS

Claims 1-21 are pending in the application. Of these pending claims, Claims 1 and 7 stand rejected under 35 U.S.C. § 102(b); Claims 2-6, 8-21 stand rejected under 35 U.S.C. § 103(a). The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1 and 7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Williams (U.S. Pat. No. 4,510,894). This rejection is respectfully traversed.

Applicant notes that Claim 1 is directed to a compensating shaft for reciprocating piston engines and employs a compensating weight that is connected torsionally elastically to a compensating shaft. More specifically, the compensating weight includes an elastic element that is supported on the compensating shaft in the circumferential direction. Similarly, Claim 7 is directed to a compensating shaft for a reciprocating piston engine and includes a compensation weight, a shaft and a damping member that elastically couples the compensation weight and the shaft to enable relative rotation between the shaft and the compensation weight.

In contrast, Williams appears to disclose an engine arrangement using a coaxial or radial cam to operate pistons of the engine with an improved piston-to-cam connection means. Further an improved thrust radius arm is provided which takes all torque reactions acting on the camshaft during operation of the engine (column 2, lines 17-29).

Williams does not teach or suggest the mounting of a compensation weight to a shaft in a torsionally elastic manner. In their discussion of Williams, the Office has stated that “the compensating weight [is] connected torsionally elastically to the compensating shaft 180 (see col. 27, lines 64-68).” Applicant respectfully submits, however, that this assertion is wholly incorrect. For the convenience of the Office, column 27, lines 64-68 states the following:

The power pistons are statically balanced but will set up a rocking couple, which may be taken care of by elastic mounting of the engine, or by a couple of counter-rotating phased balance shafts running at twice engine speed.

Regarding the phrase “elastic mounting of the engine,” Applicant submits that one of ordinary skill in the art would appreciate this to mean that an elastic mount was disposed between the exterior of the engine and a structure (e.g., machine or vehicle frame) to which the engine was to be mounted. Such elastic mount merely attenuates vibration that is transmitted from the engine to the structure to which the engine is mounted.

Regarding the phrase “a couple of counter-rotating phased balance shafts running at twice engine speed”, Applicant submits that one of ordinary skill in the art would appreciate this to mean that two additional shafts (i.e., the balance shafts) could be incorporated into the engine and driven by the crankshaft (at twice engine speed) and that each of such balance shafts has a shaft portion with a weight that is fixedly coupled to the shaft. Moreover, such balance shafts would be discrete structures that do not form a part of the main shaft (180) or power cam (181). In this regard, the main shaft 180 runs at engine speed while the balance shafts run at twice engine speed.

It is well settled that “the burden of establishing a *prima facie* case of anticipation resides with the Patent and Trademark Office.” *In re Skinner*, 2 USPQ 2d 1788, 1788-89 (B.P.A.I. 1986). If the examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent. *In re Oetiker*, 977 F.2d 1443, 24 USPQ 2d 1443 (Fed. Cir. 1992).

In *W.L. Gore & Associates v. Garlock, Inc.*, the Federal Circuit stated that “anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is not enough, however, that the reference disclose all the claimed elements in isolation. Rather, as stated by the Federal Circuit, the prior art reference must disclose each element of the claimed invention “*arranged as in the claim*”. *Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984).

Anticipation, however, may reside even if the prior art reference relied on does not expressly disclose a minor aspect of the claimed invention. Under the principles of inherency, if a structure in the prior art necessarily functions in accordance with the limitations of a process or method claim of an application, the claim is anticipated. *In re King*, 801 F.2d 1324, 231 USPQ 136, 138 (Fed. Cir. 1986). The Federal Circuit has stated:

To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference and that it would be so recognized by persons of ordinary skill. *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 20 USPQ 2d 1746, 1749 (Fed. Cir. 1991).

In this regard, the CCPA has added that “[i]nherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a

given set of circumstances is not sufficient.” *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (C.C.P.A. 1981) (quoting *Hansgirk v. Kemmer*, 102 F.2d 212, 214, 40 USPQ 665, 667 (C.C.P.A. 1939) (emphasis in original).

Applicant submits that Williams is not a single prior art reference that teaches or suggests each element of Claim 1 or Claim 7 as arranged in these claims. Moreover, Applicant submits that the Office cannot rely on the principals of inherency because they would be using the principal of inherency to establish the entirety of the claimed invention (rather than a minor aspect of the claimed invention) and cannot establish that one of ordinary skill in the art would understand the term “balance shaft” to include a counterweight that was torsionally elastically coupled to a shaft. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 1 and 7 under 35 U.S.C. §102(b).

REJECTION UNDER 35 U.S.C. § 103

Claims 2-4, 8-18, 20 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Williams (U.S. Pat. No. 4,510,894) as applied to Claims 1 and 7 above, and further in view of McGovern, et al. (U.S. Pat. No. 4,953,517). This rejection is respectfully traversed.

Applicant initially notes that Claims 2-4 depend from Claim 1 and as Claims 8-18, 20 and 21 depend from Claim 7. As the Office relies on Williams in support of the rejection of Claims 1 and 7, and as Applicant submits that Williams does not teach or suggest each element of Claims 1 and 7, Applicant respectfully submits that the combination of Williams and McGovern does not present a prima facie case of

obviousness as such combination does not teach or suggest each element of Claims 1 and 7, let alone Claims 2-4, 8-18, 20 and 21.

Applicant further notes that the Office has not resolved the level of ordinary skill in the pertinent art to determine whether the differences between the prior art and the claims at issue would have been obvious. In this regard, Applicant notes that the Office has wholly failed to consider the fact that the Examiner's modification of the main shaft (180) and power cam (181) of Williams would alter the relationship (i.e., timing) of the cam relative to the pistons in Williams. Applicant notes that the Patent Laws draw a distinction between trade-offs and motivation to combine: trade-offs often concern what is feasible, not what is necessarily desirable, whereas motivation to combine requires the latter. See, e.g., *Winner International Royalty Corp. v. Wang*, 2002 F.3d 1340, 53 USPQ2d 1580 (Fed. Cir.), *cert. denied*, 530 U.S. 1238 (2000). Given that the timing of a cam relative to a piston affects the power that is produced by the engine, as well as exhaust emissions of the engine, the modification proposed by the Examiner does not appear to be "necessarily desirable" and as such, there is no motivation for the proposed modification of Williams.

Claims 5, 6 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Williams (U.S. Pat. No. 4,510,894) in view of McGovern, et al. (U.S. Pat. No. 4,953,517), as applied to Claims 4 and 18 above, and further in view of Fox et al. (U.S. Pat. No. 4,282,836). This rejection is respectfully traversed.

Applicant initially notes that Claims 5 and 6 depend from Claim 1 and as Claim 19 depends from Claim 7. As the Office relies on Williams in support of the rejection of

Claims 1 and 7, and as Applicant submits that Williams does not teach or suggest each element of Claims 1 and 7, Applicant respectfully submits that the combination of Williams, McGovern and Fox et al. does not present a prima facie case of obviousness as such combination does not teach or suggest each element of Claims 1 and 7, let alone Claims 5, 6 and 19.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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/ Michael D. Zalobsky /
By: _____
Michael D. Zalobsky
Reg. No. 45,512

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600